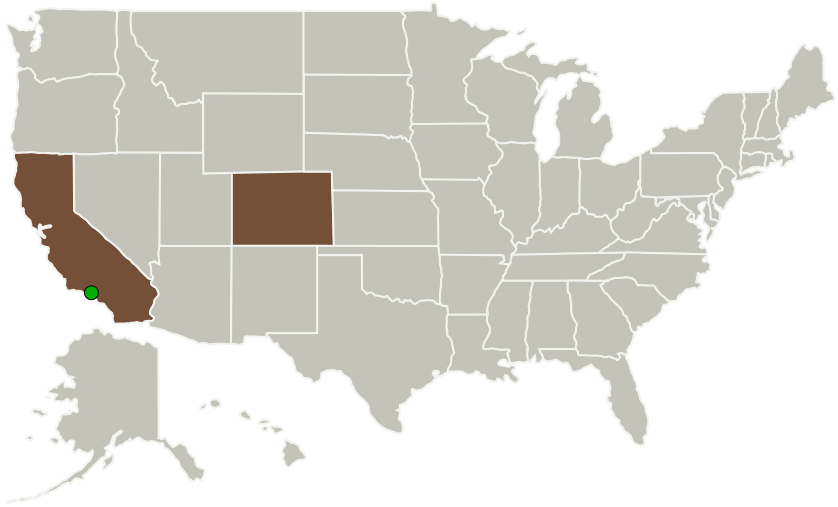
Inorganic Nanostructured High-Temperature Magnet Wires, Phase I

Completed Technology Project (2011 - 2011)

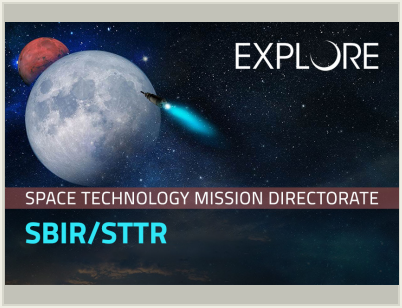
Project Introduction

This project will develop a high-temperature tolerant electrically-insulating coating for magnet wires. The Phase I program will result in a flexible, inorganic coating for copper, nickel, aluminum and their alloy wires that can be wound to produce magnets with superior thermal resistance. Eltron will produce a conformal insulating coating that permits continuous operation at temperature of at least 500 deg. C (932 deg. F), which exceeds current SOA coatings by 100%. According to NEMA, magnet wire is required for the production of 90% of all electricity. As industry attempts to shrink process size and increase output from these devices, their operating temperatures increase and conventional wire insulation tends to fail. High-temperature magnet wire allows for continuous operation under these environments. Few competitors exist that are producing magnet wire capable of functioning in this temperature range.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Eltron Research & Development, Inc.	Lead Organization	Industry	Boulder, Colorado
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California



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Primary U.S. Work Locations	
California	Colorado

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138665)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Eltron Research & Development, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

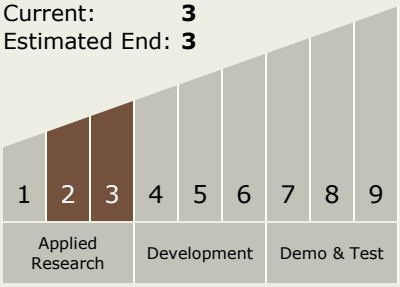
Carlos Torrez

Principal Investigator:

Sara Rolfe

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Completed Technology Project (2011 - 2011)

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.2 Electric Space Propulsion
    - TX01.2.2 Electrostatic

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System